FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/12
Date Received: 11/19/12
Project: % of Acid M09793, F&BI 211352
Date Extracted: 11/20/12
Date Analyzed: 11/20/12

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Sample ID Laboratory ID	Specific Gravity
M09793A Sm Tank 211352-01	1.17
M09793AA Sm Tank 211352-02	1.11
M09793B Lg Tank 211352-03	1.23
M09793BB Lg Tank 211352-04	1.12

Note: The third significant digit is an estimate

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Date Received: 11/19/12
Project: % of Acid M09793, F&BI 211352
Date Extracted: NA
Date Analyzed: 11/20/12

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Sample ID Laboratory ID	Percent Acid
M09793A Sm Tank 211352-01	9.7
M09793AA Sm Tank 211352-02	6.5
M09793B Lg Tank 211352-03	14
M09793BB Lg Tank 211352-04	6.9

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Laboratory Code: 211352-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Specific Gravity	1.17	1.17	0	0-2

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Laboratory Code: 211352-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Percent Acid	9.7	9.7	0	0-20

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

211852

SAMPLE CHAIN OF CUSTODY

ME 11-19-12 AI3

Send Report To: Gerard Thompson
Company: Alaskan Copper Works
Address: 628 S. Hanford St
City, State, ZIP: Seattle WA 98134
Phone #: 206-571-6033 Fax #: 206-382-4309

SAMPLER (signature):
PROJECT NAME/NO.: % of Acid
PO #: M09793
REMARKS:

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TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH ASAP

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	% of Acid	Spec. Gravity				Notes
Small Tanks																	
M09793A	01	11/19/12	1:00	HNO3	1							X	X				
M09793AA	02	11/19/12	1:00	HNO3	1							X	X				
Large Tanks																	
M09793B	03	11/19/12	1:00	HNO3	1							X	X				
M09793BB	04	11/19/12	1:00	HNO3	1							X	X				

ANALYSIS REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Gerard Thompson	AcW	11/19/12	3:09 PM
	Eric Yarr	FAB	11/19/12	15:10

Samples received at 18 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

AKC-00034243

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

November 27, 2012

Gerald Thompson, Project Manager
Alaskan Copper Works
PO Box 3546
Seattle, WA 98146

Dear Mr. Thompson:

Included are the results from the testing of material submitted on November 19, 2012 from the % of Acid M09793, F&BI 211352 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ACU1127R.DOC